

SEVERE POST THERMAL BURN CICATRICAL ECTROPION WITH CORNEAL ULCERATION : AN ILLUSTRATIVE CASE

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ABSTRACT

Management of postburn cicatricial ectropion of the upper lid is always a challenge for the oculoplastic surgeon, as they are often associated with exposure keratitis and ulceration. Traditionally, split thickness grafts have been described for upper lid reconstruction and tarsorrhaphies have been discouraged. We present a case of corneal ulceration associated with postburn cicatricial ectropion presenting 10 years following the initial trauma. The patient underwent full thickness skin grafting and tarsorrhaphy to release the ectropion with resolution of corneal ulceration. We believe that full thickness skin grafts and tarsorrhaphy are effective in correcting upper lid cicatricial ectropion, without functional compromise.

Key Words: *Cicatricial ectropion, corneal ulcer, skin graft, tarsorrhaphy.*

INTRODUCTION

Facial involvement is relatively common in people sustaining thermal burns. Spencer et al report the presence of facial burn in 40% of their burn patients.¹ Presence of facial burn is frequently associated with ocular involvement. Stern et al found that 15% of their burn patients had ocular pathology with eyelid burns and lid contractures being the most common injuries.²

Eyelid burns cause contractures that can lead to cicatricial ectropion, exposure keratitis, ulceration, perforation and blindness. Astori et al in their review of postburn cicatricial ectropion release patients found that all had exposure keratitis and required surgery during the early postburn period.³

We present a case report of severe postburn cicatricial ectropion of the left upper lid with late onset of corneal ulceration

that was refractory to medical treatment. Ectropion release was performed with full thickness free grafts and tarsorrhaphy, with subsequent resolution of corneal ulceration. This case illustrates the fact that exposure keratitis with ulceration in cicatricial ectropion calls for urgent surgical intervention and that full thickness skin grafts and tarsorrhaphy can be used to reconstruct the upper lid with good functional results.

CASE REPORT

A 22 year old male presented with history of watering, redness, pain and diminution of vision, of 10 days duration in his only seeing left eye. Ten years back he had fallen head first into a camp fire during an epileptic fit and suffered extensive facial burns that blinded his right eye. He is a mason by profession and at presentation had no history of trauma to the left eye.

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Visual acuity in the Right eye was no perception of light and in the left eye counting fingers at one foot. He had severe left upper lid cicatricial ectropion and corneal ulceration with 4mm hypopyon (Fig.1). Syringing revealed patent nasolacrimal sys-

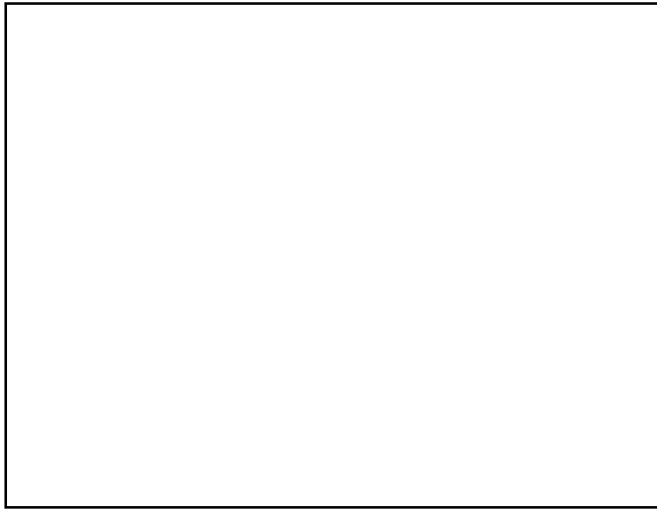


Fig.1 : Twenty two year old male with left upper lid cicatricial ectropion and hypopyon corneal ulcer.

tem on the left side and corneal scrapping demonstrated *Streptococcus pneumoniae* sensitive to Cefazolin. Even with intensive antibiotic therapy the corneal ulceration became worse and by day seven he had a 6 mm hypopyon. Due to deteriorating condition of patient's corneal ulceration, upper eyelid ectropion release with full thickness skin grafting was planned. The surgery was performed under local anesthesia using Lidocaine 2% with epinephrine. The ectropion was released starting above the lid margin with excision of scar tissue extending up to the brow area and beyond (Fig.2). Following which full thickness skin grafts were taken from the retroauricular area to reconstruct the tissue defect. In addition anchoring sutures were placed in the superior conjunctival fornix to stabilize the tarsal plate and medial tarsorrhaphy was performed as an adjunctive procedure to minimize post operative exposure and counteract contracture forces (Fig.3). Graft bolsters were removed in five days and sutures on the 10th post operative day.

Following ectropion release and resolution of exposure keratitis, there was gradual improvement of the corneal ulcer. One

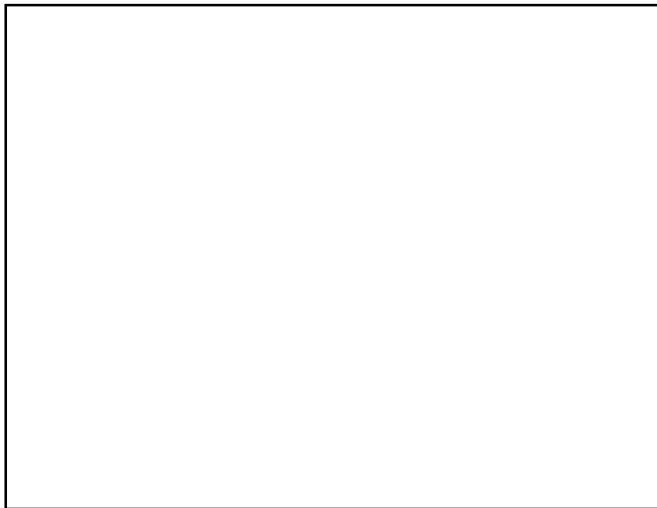


Fig.2 : Release of the upper lid.



Fig.4 : Patient one month postoperative with healed corneal ulcer.



Fig.3 : Full thickness skin grafting with medial tarsorrhaphy.



Fig.5 : Four month postoperative following release of tarsorrhaphy.

month post surgery the corneal ulcer had healed completely, there was adequate tear film and visual acuity had improved to 6/60 (Fig.4). Four months following surgery the skin graft had taken well and there was minimum contracture. At this point the medial tarsorrhaphy was released as it was interfering with the patient's vision and he had developed trichiasis at the site of tarsorrhaphy that was irritating the cornea (Fig.5).

At six months post operative the patient was doing well with visual acuity of 6/36 in his left eye, the grafts had healed well with normal lid function and minimum contracture. There were no signs of either recurrence of ectropion or exposure keratitis.

DISCUSSION

Reconstruction of postburn cicatricial ectropion is always a challenge. Due to strong attachments of the eyelid structures to the lateral and medial palpebral ligaments in the horizontal plane the contracting forces exert maximum force in the vertical plane where the tarsal plates and the orbicularis are loosely attached to the orbital margins by thin palpebral fascia.⁴ Therefore the distractive forces of wound contraction and scarring tend to pull the lids towards the orbital margins causing malposition of the lids. It has also been pointed out that during reconstruction, both intrinsic contractions caused by scarring of the eyelid itself and extrinsic contractions resulting from scar formation of the surrounding tissue, should be addressed.⁵ Though the dogma has been that upper lid reconstruction should be done using split thickness graft as this does not interfere with lid function, Lile *et al* in their series have demonstrated lower rates of ectropion in burn patients who underwent full thickness greafting as compared to split grafts. They could not detect any difference in appearance and function of the lids between the two types of grafts.⁶ They also found that full thickness grafts taken from the retroauricular area have the least amount of contractures whereas those from infraclavicular sites had the highest percentage of contracture whereas those from infraclavicular sites had the highest percentage of contracture leading to ectropion. Some authors advocate the use of myocutaneous local flaps for reconstruction of the eyelids as they are easier to manage from the point of post operative care and tend to contract less.⁷ In acute burn cases *Staphylococcus aureus* and *Pseudomonas aeruginosa* have been found to be the most common pathogens causing corneal ulceration followed by *Candida albican*.⁸ Literature regarding postburn cicatricial ectropion with chronic exposure keratitis are lacking.

In our patient the first priority was management of corneal ulceration and correction of the exposure keratitis. Although any repair of the lids should restore acceptable appearance, in this case preservation of the function thus the vision was the pri-

mary goal. We decided to use full thickness grafts from retroauricular areas, as this technique is easier and requires less instrumentation than partial thickness grafts. The whole procedure could be done under local anesthesia without much discomfort to the patient. The severity of the facial burns and the size of the defect to be reconstructed precluded us from using local myocutaneous flaps instead two free grafts were utilized for reconstruction. This was necessary because there was not enough tissue at any one donor site to cover the whole defect and the grafts were positioned in such a manner that the horizontal junction between the two would sit over the superior lid sulcus minimizing graft buckling in that area. We feel tarsorrhaphy was a useful procedure in this case both during surgery and post operatively for more than one reason. Firstly, traction suture applied at the site of tarsorrhaphy help to reposition the lid structures to more anatomical form and assist in adequate exposure of scar tissue bed for excision. Secondly, it immobilizes the graft reducing the chances of failure and it provides excellent coverage of the cornea minimizing exposure postoperatively thereby promoting healing. This was apparent with the rapid healing of the corneal ulcer and the patient regaining his vision.

CONCLUSION

Postburn cicatricial ectropion of the upper eye lids are difficult to manage as they often lead to severe exposure keratitis, corneal ulceration and blindness. Recently, split thickness grafts and various myocutaneous flap techniques have been advocated for reconstruction of upper lid ectropion. Our case illustrates that full thickness skin grafting from the post auricular region is a simpler technique requiring lesser instrumentation and gives good results in terms of restoring the function of the upper lids and preventing exposure keratitis. Further it demonstrates that tarsorrhaphy is a useful adjunctive procedure for management of corneal ulceration associated with cicatricial ectropion. The right eye of this patient is testimony to the fact that in patients with facial burns, severe ectropion with ensuing complication of blindness is not uncommon and aggressive surgical intervention can prevent permanent visual impairment.

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